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Western Governors' Regional Energy Policy Office
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SPECIAL REPORT TO THE GOVERNORS

TAXATION OF SURFACE AND UNDERGROUND COAL MINING IN WESTERN STATES

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Resource Economist

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The taxation of the surface and underground coal mining operations in each state were verified by the following tax officials. In the case of Utah, the calculation of the property taxes was furnished by the State Tax Commission. The New Mexico Department of Taxation calculated the complete tax payments for each example.

Arizona	Mr. Donald E. Ross, Mineral Property Appraiser Department of Revenue
Colorado	Mr. George Hirschfield, Senior Appraiser Division of Property Taxation Department of Local Affairs and State Department of Revenue
Montana	Mr. John Clark, Administrator Research Division Department of Revenue
New Mexico	Mr. Charles Turpin, Director of Tax Research Bureau of Revenue
North Dakota	Ms. C. William Cudworth, Research Analyst Office of State Tax Commissioner
Utah	Mr. Robert H. Cooper, Assistant Director Property Tax Division State Tax Commission
Wyoming	Mr. James E. Petry, Director of Revenue Wyoming Tax Commission

Summary

The Western Governors' Regional Energy Policy Office was directed by its Board of Directors to prepare reports analyzing the taxation of coal mining in western states. The reports were to be designed to evaluate the taxation of coal mining from the viewpoint of public finance theory and to recommend tax policies based upon sound economic theory and policies as well as practical considerations in state and regional economic planning. It is intended that the reports will enable the governors, legislatures, and the general public to determine the most desirable tax structure to adopt for the taxation of coal mining. Several states have recently modified their taxes on coal mining; other states have been evaluating new taxes on coal mining or a modification of their existing tax structures in regard to the taxation of this business activity.

An initial WGREPO report, published last January, entitled "Taxation of Coal Mining: Review with Recommendations," explored the development of the taxation of coal mining with emphasis on severance taxes and property taxes. The report recommended methods of taxing coal mining enterprises consistent with principles of taxation.

The present report sets forth the taxes on coal mining in seven western states. Two hypothetical mines, surface and underground, from U.S. Bureau of Mines studies are, in a sense, placed on a magic carpet and located in each state. The property, income, franchise, severance, and gross receipts taxes are calculated as if the mine were in operation in each state.

The tax comparisons from state to state enable the reader to compare both total taxes and specific taxes between states. Total taxes are shown on a per ton basis in Table 1 to assist in evaluating the productivity of these tax systems. These data are predicated in a model mine in each state; actual taxes per mine would vary insofar as the model mine is different from a typical mine in a state.

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Taxation of Surface and Underground Mining in Western States

Introduction

There is substantial need for additional revenues in areas where coal mining and other energy-related developments are occuring. The demands are rendered more pressing than in other cases of development, because they usually take place in rural areas where existing community services and facilities are not well developed. Furthermore, the pattern of development is often uneven, with a bulge in population and, hence, a sudden increase in the need for community services during the early construction stages of development. Consequently, sound financial planning is imperative in order to coordinate revenues with public expenditures.

Whether or not the revenues generated by particular energy developments are adequate to fund an acceleration of public facilities and services is a complex question and will be dealt with in subsequent reports. Suffice to say, a shortfall in revenues compared with expenditure needs may occur even when tax yields from energy development are large and seemingly adequate. One reason for this quixotic situation may be the channelling of tax funds into areas where the impacts are minor or into state general funds. In the latter case, the revenues may or may not be appropriated or earmarked for impacted local governments. Therefore, a high level of taxation, per se, may not indicate that the impact problems are ameliorated. On the other hand, a modest tax yield will not provide the potential revenue base for adequate financial support.

The plight of impacted areas is compounded in those regions where the state legislature is more oriented to urban issues and problems. Urban legislators are not, in general, as vitally concerned with rural area problems. Urban areas and the nation are, however, in need of energy. And, if energy resources are to be developed to an optimum extent, it is necessary that wholesome, healthy, and productive communities are created in areas of energy development. Orderly development in rural areas requires a financial base to support schools, roads, police and fire protection, sewers and water systems, health services, and other functions of government.

There is a growing need for adequate taxes on mining to finance state and local governmental services. Accelerated coal production has produced a heightened pressure on school systems, roads and street networks, water and sewer systems, fire and police services, as well as the multi-faceted programs of state government.

While planning for the impacts caused by development is vitally important, the sharp growth public expenditure requirements require an underpinning of financial support. Adequate taxation of coal mining should play an important role in providing for this increased support. This report should assist state and local governments in the design of a more equitable tax structure.

The cornerstone of financial support is the taxation of economic activity. This report compares the taxes on coal mining generated from the

current state and local tax systems in our coal-producing western states. The variations in the taxes flowing from this type of energy development, to a degree, indicate the variations in basic financial support available to underwrite local capital improvements and the necessary public services of impacted communities.

Method of Analysis

The report entitled "Taxation of Coal Mining: A Review with Recommendations" was published in January, 1976. That general review of taxation is now supplemented with this report. The taxes which would be paid by two hypothetical mining operations in seven of the ten WGREPO states, namely Colorado, Montana, Wyoming, North Dakota, New Mexico, Utah, and Arizona, are estimated. Each of the states' tax departments has checked the calculations for accuracy. The states of Nevada, Nebraska, and South Dakota have chosen not to be included because of their limited or non-existent coal mining.

Two coal mining operations, a surface mine and an underground mine, have been simulated in two studies published by the U.S. Bureau of Mines as Information Circular 8703 and Information Circular 8682. These examples are reproduced in the appendices to this report. In order to achieve a realistic result, the income statement for each state in which corporation net income is taxed was modified by including all deductible state and local taxes calculated in a state in the operating costs account. This adjustment has been reflected in the appropriate tables for each state. The Bureau of Mines examples often underestimated the tax payments.

Our analysis, therefore, modifies the two model mining operations to reflect our calculation of taxes, rather than the taxes included in the Bureau of Mines comparison. It follows that either the sales revenues or gross profits will be affected. The assumption has been made that the calculated taxes will increase sales revenues by means of a pass-through of tax costs into the price structure, rather than act as an influence on gross or net profits.

It may be argued that the selling price per ton is either too low or too high, compared to actual prices in some states. This report is designed to compare the tax structures of the states. Consequently, the figures for each state depict the taxes generated from the same set of facts from state to state. If selling prices were to be varied for reasons other than a pass-through of calculated taxes, the tax systems comparisons would be measuring economic differences as well as differences in the tax structures.

The present report, then, is structured to enable the reader to compare the relative taxes imposed state by state. If the taxes per ton are twice as high in one state compared to another, the tax system is considered to be twice as "productive," insofar as the taxation of coal mining is concerned. The actual taxes from mining operations may vary in different proportions because the actual economic facts may vary from the model. For example, the price of surface-mined coal, as a rule, is higher in Wyoming than the model stipulates, and this would affect the actual tax payments per ton.

Unemployment insurance and workman's compensation premiums are not included, because they are for specific purposes and are, by nature, insurance programs. Sales taxes on coal are included only when applicable, while the one-time sales taxes on machinery and equipment are excluded, because they are not annual levies.

Assumptions

The major assumptions in conducting the analysis of comparative taxation were:

1. the operations are conducted by a corporation which has its sole operation in one business enterprise.

2. the payroll, property, and sales of the end product take place and are located in the state where the coal is mined.

3. the coal is sold to a utility for electric generation.

4. the operation is two years old, and sales taxes on machinery, equipment, and other purchases are not annualized and reflected in the report.

5. when taxes must be known to compute the taxable base, because of deductability of federal taxes and the like, the procedure is to use simultaneous equations.

The Findings

The tax comparisons are reflected in Tables 1 and 3. There was found to be wide variation in state and local taxes on coal mining among the states. Total taxes per ton from surface mining, using the Bureau of Mines data, varied from $1.48 in Montana to 9 cents in Utah. A more detailed breakdown by states is shown in Tables 2 and 3, and the tax calculations by state are shown in Tables 4 to 10.

State and local tax patterns are quite dissimilar among the states. In Montana and North Dakota, the lion's share of the tax revenue from surface coal mining operations is from the severance tax. No severance tax is levied in Colorado, Utah, or Arizona. The remaining states rely upon the property tax, with the exception of New Mexico. New Mexico and Arizona impose a tax on the privilege of selling coal, and consequently this source of revenue is important in their state and local tax pictures. Every state except Arizona and Montana impose a sales tax on mining equipment purchased.

The adequacy of taxes on energy development to finance community needs is a subject to be addressed in a later report. Nevertheless, a perusal of taxes raised from the coal mining examples included in the present report indicates an adequate flow of state and local tax revenues to finance community impacts can be derived from the taxation of mining operations if the revenues are properly distributed.

In the surface mine example, it is estimated by the Bureau of Mines that 213 workers would be employed. This number of workers implies a population increase of about 788 persons, due to direct employment, assuming a "standard" family of 2.7 dependents per worker. State and local taxes are in the $400 - $600 range per capita in the WGREPO states. The higher figure of $600 implies an annual revenue need of some $473,000 a year to provide for the additional public service costs of the additional 788 people. The front-end capital requirements for public facilities of $3,000 per capita, which is about the figure estimated in various impact studies, would require a one-time expenditure of about $2.4 million to finance additional capital facilities. This calculates out at $240,000 a year for a twenty-year amortization at 8% interest.

There would be, in addition, secondary employment and the dependents of this derivative population, which heighten the financial needs to meet the cost of impacts. These public requirements are in reference to the additional streets, schools, police and fire protection and other expenditures to support service workers who are attracted to the area. Furthermore, the state governments have a legitimate claim to a portion of the tax revenues for state government purposes other than community impacts.

A detailed discussion of the community financial requirements will be undertaken in a subsequent report. However, the tax revenues which flow from the present tax structures indicate a solid foundation of taxpaying ability exists to meet community impacts from coal mining. It is obvious that some states, such as Montana, North Dakota, Wyoming and Arizona are in a better position than other states insofar as tax revenues from coal mining are concerned.

Table 1

Summary of Annual Taxes on Surface and Underground Mining based on U.S. Bureau of Mines Models, Selected States, 1975-76

	Surface Mine 9.2 Million Ton Annual Production		Underground Mine 4.99 Million Ton Annual Production	
State	Total Taxes	Taxes Per Ton	Total Taxes	Taxes Per Ton
Arizona	$4,224,920	$.46	$7,405,740	$1.48
Colorado	$1,458,292	.16	$2,231,505	.45
Montana	$13,580,680	1.48	$7,735,094	1.55
New Mexico	$2,434,198	.26	$4,505,577	.90
North Dakota	$4,978,686	.54	$3,066,134	.62
Utah	$ 798,307	.09	$1,159,730	.23
Wyoming	$4,004,700	.43	$6,773,651	1.36

Source: Tables 4 through 10

Table 2

Percent of Taxes by Source

Surface Mine with 9.2 Million Ton Annual Production

Based on Bureau of Mines Model, Selected States, 1975-76

	Source of Tax Revenue in Percent					
State	Severance	Property	Income	Gross Receipts	Misc.	Total
Arizona	None	74.5%	5.0%	20.6%	None	100%
Colorado	None	81.8	13.5	None	4.7	100
Montana	70.4	26.5	1.8	None	1.4	100
New Mexico	13.8	24.3	7.9	52.1	1.8	100
North Dakota	96.1	.8	3.0	None	.1	100
Utah	None	72.7	27.3	None	None	100
Wyoming	41.4	58.5	None	None	None	100

Source: Tables 4 through 10

Table 3

Total Taxes by Source of Tax

Surface Mine with 9.2 Million Ton Production

Based on U.S. Bureau of Mines Model, Selected States, 1975-76

Annual Tax, Source (in millions of dollars)

State	Severance	Property	Income	Gross Receipts	Misc.	Total
Arizona	None	$3.147	$.210	$.868	None	$4.225
Colorado	None	1.193	.197	None	$.069	1.458
Montana	$9.556	3.599	.240	None	.184	13.581
New Mexico	$ .338	.497	.191	1.267	.044	2.434
North Dakota	$4.784	.042	.150	None	.002	4.979
Utah	None	.580	.218	None	None	.798
Wyoming	$1.659	2.344	None	None	.001	4.004

Source: Tables 4 through 10

Summary Table 4

ARIZONA

Taxes on Surface Mine with 9.2 Million Production

1)	Property Tax	$3,146,620
2)	Privilege Tax	868,300
3)	Corporation Income Tax	210,000
	Total Taxes	$4,224,920

Source: Table 4-A

Detailed Table 4-A

ARIZONA

Calculation of Taxes on

Surface Mine with 9.2 Million Ton Production

Property Tax

Gross Receipts	$34,731,000
Operating Costs	27,608,000
Gross Profit	7,123,000
Depreciation add back	3,631,600
Minus:	
Environmental costs	500,000
Replacement expenditures	1,000,000
Federal and State profit tax	1,861,000
	$ 7,393,600
Capitalization Factor[1]	6.7942
Full Value	50,233,597
Assessment Level	60%
Taxable Value	30,140,158
Tax Rate	10.44
Tax	$ 3,146,620

[1]Haskold formulae used.

Privilege Tax

Rate: 2½% of gross proceeds $ 868,300

Corporation Income Tax

State Tax $ 210,000

(state tax deductible and therefore simultaneous equation used to calculate)

Summary Table 4-B

ARIZONA

Taxes on Underground Mine with 4.99 Million Ton Production		
1) Property Tax		$5,251,740
2) Privilege Tax		1,570,000
3) Corporation Income Tax		584,000
	Total Taxes	$7,405,740

Source: Table 4-C

Detailed Table 4-C

ARIZONA

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Property Tax

Gross Profit	$16,450,900
Depreciation add back	3,675,000
	20,126,000
Minus:	
Environmental Cost	600,000
Replacement Cost	2,000,000
Federal and State Profits Taxes	5,186,000
	12,340,000
Capitalization Factor	6.7942
Full Value	83,840,428
Assessment Level	60%
Taxable Value	50,304,256
Tax Rate	10.44
Tax	$ 5,251,740

Privilege Tax

Rate: 2½% of gross proceeds	1,570,000

State Corporation Income Tax 584,000

(state tax deductible and therefore simultaneous equation used to calculate tax)

Summary Table 5

COLORADO

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Annual License Fee	$ 50
2)	Tonnage Tax (7/10 of 1 cent)	64,400
3)	Franchise Fee	250
4)	Annual Report Fee	5
5)	Reclamation Fee ($50 plus $15 per acre)	3,515
6)	Property Taxes	1,192.980
7)	Corporation Income Tax	197,092
	Total Taxes	$1,458,292

Source: Table 5-A

Detailed Table 5-A

COLORADO

Calculation of Taxes on

Surface Mine with 9.2 Million Ton Production

Property Taxes

Mineral Estate

Production value - calculated based upon royalties of 8%, $2,492,000, capitalized at 11½% on present worth of dollar.

Actual value of reserve	$18,939,000

Reversion Value

Acres, 4,620, with reversion value of $100 per acre capitalized at 11½% on present worth of dollar.

Actual value	$ 50,820
Total value, incl. min. estate	18,990,020
Assessment ratio	30%
Taxable value	5,699,006
Tax rate	83.43 mills
Taxes	$ 475,300

Real and Personal Property

Real property & equipment	$27,488,000
Assessment ratio	30%
Taxable value	8,246,500
Tax rate	83.43 mills
Taxes	$ 688,000
Schedule "F" property	
Value	$ 1,978,700
Tax rate	1.5%
Taxes	$ 29,680
Total Taxes	$ 717,680

(continued on following page)

Detailed Table 5-A (continued)

Corporate Income Tax

Sales	$31,811,534
Operating Costs	24,688,534
Gross Profit	7,123,000
Depletion	- 3,181,153
Taxable Income	3,941,847
Tax Rate	5%
Taxes	$ 197,092

Summary Table 5-B

COLORADO

Taxes on Underground Mine with 4.99 Million Ton Production

1)	Annual License Fee	50
2)	Tonnage Tax (7/10 of 1 cent)	34,930
3)	Franchise Tax	250
4)	Report Fee	5
5)	Reclamation Fee ($50 plus $15 per acre)	12,215
6)	Property Tax	$1,647,767
7)	Corporation Income Tax	536,288
	Total Taxes	$2,231,505

Source: Table 5-C

Detailed Table 5-C

COLORADO

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Property Taxes

Mineral Estate

Production value - calculated based upon royalties of 8%, 4,450,900, capitalized at 11½% on present worth of dollar.

Actual value of reserve	$34,500,000

Reversion Value

Acres, 16,228, with reversion value of 100 per acre capitalized at 11½% on present worth of dollar.

	$ 178,508
Total Mineral Estate and Reversion Value	$34,678,508
Assessment Ratio	30%
Assessed Value	$10,403,552
Tax Rate	83.43 mills
Taxes	$ 867,972

Real Property

Original Cost	$ 1,386,800	
Depreciation-2 years	138,680	
	1,248,100	
Assessed Ratio	30%	
	374,400	
Pro-rated indirect investment	+22%	
Total	$ 456,768	assessed value

Personal Property

Original Cost	$28,575,700	
Depreciation-2 years	4,286,400	
	24,289,300	
Assessed Ratio	30%	
	7,286,800	assessed value
Pro-rated indirect investment	+22%	
Total	8,889,890	

(continued on following page)

Detailed Table 5-C (continued)

Personal Property (continued)

Assessed-Total Real & Personal	$ 9,346,700
Tax Rate	83.43 mills
Taxes-Total Real & Personal	$ 779,795

Corporation Income Tax

Sales	$57,250,000
Operating Cost	40,799,700
Gross Profit	16,450,800
Taxable Income	-5,725,000
Tax Rate	5%
Taxes	$ 536,288

Summary Table 6

MONTANA

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Resource Indemnity Trust Tax	$ 184,280
2)	Property Tax on Production	2,293,600
3)	Property Tax on Machinery and Equipment	1,305,600
4)	Severance Tax	9.556,800
5)	Corporation Income Tax	240,400
	Total Taxes	$13,580,680

Source: Table 6-A

Detailed Table 6-A

MONTANA

Calculation of Taxes on

Surface Mine with 9.2 Million Ton Production

Gross value for severance, production tax calculations, and resource indemnity tax.

Operating costs before severance, production tax, or state income tax	$24,732,900
Gross profit	+7,123,000
Gross sales	$31,855,900

Resource Indemnity Trust Tax

Gross value		$31,855,900
Tax rate	$25 plus ½ of 1% of gross value	
Tax		$ 184,280

Property Tax on Production

Gross value of production	$31,855,900	
Assessed at 45%	$14,335,155	
Tax rate	160	mills
Taxes	$ 2,293,600	

Severance Tax

Gross value before property tax on production and resource indemnity trust tax.

	$31,855,900
	30%
	9,556,800

Property Tax

Machinery & Equipment

Original investment	$34,464,200	
Less depreciation-2 years	-7,263,200	
	27,201,000	
Assessed level	30%	
	8,160,300	
Tax rate	160	mills
Taxes	$ 1,305,600	

(continued on following page)

Detailed Table 6-A (continued)

State Corporation Income Tax - Surface Mine

Sales	$51,013,580
Operating Costs	31,855,900
Plus	
Severance Tax)	
Indemnity Tax)	12,034,680
Gross Production)	
Tax	
Total	$43,890,580
Gross Profit	$ 7,123,000
Depletion[1]	3,561,500
Taxable Income	3,561,500
Tax Rate	6 3/4%
Taxes	$ 240,400

[1]Not to exceed 50% of taxable income without depletion allowance.

Summary Table 6-B

MONTANA

Taxes on Underground Mine with 4.99 Million Ton Production

1)	Resource Indemnity Trust Tax	$ 309,877
2)	Property Tax on Production	3,038,400
3)	Property Tax on Machinery and Equipment	1,419,955
4)	Severance Tax	2,279,000
5)	Corporate Income Tax	687,862
	Total Taxes	$7,735,094

Source: Table 6-C

Detailed Table 6-C

MONTANA

Calculation of Taxes on

Underground Mine with 4.99 Million Tons Production

Resource Indemnity Trust Tax

Gross Value[1]		$56,975,255
Tax Rate	$ 25 plus ½ of 1% of gross value	
Tax		$ 309,877

Property Tax on Production

Gross Value[1]		$56,957,255	
Assessed at	33%	18,989,900	
Tax Rate		160	mills
Tax		$ 3,038,400	

Severance Tax

Gross Value[1]	$56,975,255	
Tax Rate	4 %	
Tax	$ 2,279,000	

Real and Personal Property

Cost of Investment	$36,932,600	
Depreciation for 2 years	-7,350,200	
	29,582,400	
Assessed at level of	30%	
Assessment	8,874,720	
Tax Rate	160	mills
Tax	$ 1,419,955	

Corporate Income Tax

Sales	$62,602,532
Operating Costs	40,524,455
Severance Tax	+2,279,000
Resource Indemnity	+ 309,877
Gross Production Tax	+3,038,400
Total	$46,151,732
Gross Profit	$16,450,800
Depletion	-6,260,253
Taxable Income	10,190,546
Tax Rate	6 3/4%
Tax	687,862

[1]Gross value does not include resource indemnity tax, severance tax, or property tax on production

Summary Table 7

NEW MEXICO

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Resource Excise Tax	$ 213,865
2)	Severance Tax	124,267
3)	Oil and Gas Conservation Tax	44,736
4)	Property Tax	592,639
5)	Corporation Income Tax	191,403
6)	Gross Receipts Tax	1,267,288
	Total	$2,434,198

Source : Table 7-A

Detailed Table 7-A

NEW MEXICO

Calculation of Taxes on

Surface Mine with 9.2 Million Ton Production

Resources Excise Tax

Gross Production Value	$30,515,300
Deductions	2,000,000
Taxable Value	28,515,300
Tax Rate	3/4%
Tax	$ 213,865

Severance Tax

Gross Production Value	$30,515,300
Deductions (hoisting, loading, and crushing)	3,661,836
Royalty Payments	2,000,000
Taxable Value	24,853,444
Tax Rate	1/2%
Tax	$ 124,267

Oil and Gas Conservation Tax

Taxable Value (see 2 above)	$24,853,464
Tax Rate	18/100%
Tax	$ 44,736

Property Tax

Valuation	
Personal Property, Except Equipment	$ 420,567
Machinery and Equipment	24,181,750
Mineral Production	40,307,478
Miscellaneous	3,817,863
Full Value	$68,727,658
Assessment Ratio	33 1/3%
Assessed Value	22,909,219
Tax Levy	25.869 per $1,000
Tax	$ 592,639

Corporate Income Tax

Sales	$31,490,807
Operating Costs	24,367,807
Gross Profit	7,123,000
Depletion	3,149,080
Taxable Income	$ 3,973,920
Tax Rate	5%
Tax	$ 191,403

Note: State income tax is deductible in arriving at net income requiring simultaneous equation calculation.

Summary Table 7-B

NEW MEXICO

Taxes on Underground Mine with 4.99 Million Production

1)	Resources Excise Tax	$ 417,597
2)	Severance Tax	244,991
3)	Oil and Gas Conservation Tax	88,197
4)	Property Tax	918,361
5)	Corporate Income Tax	521,614
6)	Gross Receipts Tax	$2,314,817
	Total Taxes	$ 4,505,577

Source: Table 7-C

Summary Table 7-C

NEW MEXICO

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Resource Excise Tax

Gross Production Value	$55,679,666
Deductions	-0-
Taxable Value	55,679,666
Tax Rate	3/4%
Tax	$ 417,597

Severance Tax

Gross Production Value	$55,679,666
Deductions (hoisting, loading, & crushing)	6,681,559
Taxable Value	48,998,107
Tax Rate	½%
Tax	$ 244,991

Oil and Gas Conservation Tax

Taxable Value (see 2 above)	$48,998,107
Tax Rate	18/100%
Tax	$ 88,197

Property Tax

Valuation	
Machinery and Equipment	$23,239,406
Mineral Production	69,969,795
Miscellaneous	6,710,347
Total Full Value	99,919,548
Assessment Ratio	33 1/3%
Tax Levy	27.583 per $1,000
Tax	$ 918,361

Corporate Income Tax

Sales	$57,348,800
Operating Costs	40,898,000
Gross Profit	16,450,800
Depletion	-5,734,880
Taxable Income	10,715,920
Tax Rate	5%
Tax	$ 521,614

Note: State income tax is a deductible item requiring calculation of income tax by simultaneous equation.

Summary Table 8

NORTH DAKOTA

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Annual Report Fee	$ 20
2)	Coal Mining Permit Fee	2,391
3)	Property Tax	41,605
4)	Severance Tax	4,784,000
5)	State Income Tax	114,840
6)	Privilege Tax on Business	35,830
	Total Taxes	$4,978,686

Source: Table 8-A

Detailed Table 8-A

NORTH DAKOTA

Calculation of Taxes on

Surface Mine with 9.2 Million Ton Production

Real Property Tax	
Actual Investment	$3,620,800
Add: Indirect costs (13.6%)	492,400
Less: Depreciation - 2 years	812,000
	2,316,400
Assessment Factor	.207
	479,500
Less 50%	239,700
Taxable Value	239,700
Tax Rate	173.54 mills
Tax	$ 41,605
Severance Tax	
9.2 million tons @ 52 cents per ton	$4,784,000
Annual Report Fee	$ 20
Coal Mining Permit Fee	$ 2,391
Privilege Tax	
Net Income	$3,585,000
Standard Deduction	- 2,000
Taxable Base	3,583,000
Tax Rate	1%
Tax	$ 35,830
Corporate Income Tax	
Sales	
Sales	$35,378,300
Operating Cost	28,255,300
Gross Profit	7,123,000
Depletion	3,539,800
Taxable Income	3,585,200
State Income tax	$ 114,840
Tax rate - 5%	
Federal Income Tax	$1,665,700

Note: Federal income tax is deductible in arriving at net taxable income for state income tax purposes.

Summary Table 8-B

NORTH DAKOTA

Taxes on Underground Mine with 4.99 Million Ton Production

1)	Annual Report Fee	$ 20
2)	Property Tax	24,895
3)	Severance Tax	2,584,800
4)	State Income Tax	342,000
5)	Privilege Tax on Business	106,305
6)	Coal Mining Permit Fee	8,114
	Total Taxes	$3,066,134

Source: Table 8-C

Detailed Table 8-C

NORTH DAKOTA

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Real Property

Original Cost	$1,386,800
Plus pro-rated interest costs @ 9.7% total	134,520
	1,521,320
Less depreciation	- 148,000
	1,373,320
Factor .207	284,273
Taxable value @ 50%	142,136
Tax rate 173	
Taxes	$ 24,895

Severance Tax

4.99 MM tons @ 52 cents per ton	$2,594,800

Permit Fee

811	acres per year
2,434	acres in three years
$ 10	per acre
24,340	for three years
+ 250	
$24,590	for three years
$ 8,114	for one year

Corporation Fee

	$ 20

Corporation Income Tax

Sales	$58,182,715
Operating Costs	41,731,915
Gross Profit	16,450,800
Depletion	-5,818,270
Taxable Income before Federal Taxes	$10,632,530
Tax Rate	6%
Taxes	$ 342,000

Note: Federal income is deductible. Therefore, the state tax was calculated by using simultaneous equations.

(continued on following page)

Detailed Table 8-C (continued)

Privilege Tax

Net Income	$10,632,530
Standard Deduction	- 2,000
Tax Base	10,630,530
Tax Rate	1%
Taxes	$ 106,305

Summary Table 9

UTAH

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Property Taxes	$ 580,307
2)	Corporation Franchise Tax	218,000
	Total Taxes	$ 798,307

Source: Table 9-A

Detailed Table 9-A

UTAH

Calculation of Taxes on

Surface Mine of 9.2 Million Tons Production

Property Tax		
Mine		
Assessed Valuation	$2,672,265	
Machinery & Supplies		
Assessed Valuation	5,909,535	
Improvements		
Assessed Valuation	346,000	
Total Assessed Valuation	8,927,800	
Tax Levy	65	per $1,000
Tax	$ 580,307	
Corporation Franchise Tax		
Sales	$31,130,407	
Operating Costs	24,007,407	
Gross Profit	7,123,800	
Depletion	-3,113,000	
Subtotal	4,010,800	
Less State Franchise[1] Tax	218,000	
Federal Taxable Income	3,792,800	
Federal Tax	$1,820,500	
State Tax	$ 218,000	

[1]Deductible for federal income tax but not state franchise tax purposes.

Note: State corporate income tax is 6 percent of net income after federal tax deduction and depletion allowance.

Summary Table 9-B

UTAH

Taxes on Underground Mine with 4.99 Million Ton Production

1)	Property Taxes	$ 691,730
2)	Corporation Franchise Tax	468,000
	Total Taxes	$1,159,730

Source: Table 9-C

Detailed Table 9-C

UTAH

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Property Tax		
Mine		
Assessed Valuation	$3,369,412	
Machinery and Supplies		
Assessed Valuation	6,990,260	
Improvements		
Assessed Valuation	282,360	
Total Assessed Valuation	$10,642,032	
Tax Levy	65	per $1,000
Tax	$ 691,730	
Corporation Franchise Tax		
Sales	$54,863,570	
Operating Costs	38,412,770	
Gross Profit	16,450,800	
Depletion	-5,486,570	
Subtotal	10,964,230	
Less State Franchise[1] Tax	- 468,000	
Federal Taxable Income	10,496,230	
Federal Tax	$ 5,038,000	
State Tax	$ 468,000	

[1]Deductible for federal income tax but not state franchise tax purposes.

Note: State corporate franchise tax is 6% of net income after federal tax deduction and depletion allowance.

Summary Table 10

WYOMING

Taxes on Surface Mine with 9.2 Million Ton Production

1)	Property Tax on Machinery, Equipment, & Buildings	$ 270,000
2)	Property Tax on Production	2,074,000
3)	Mineral Trust Fund, Excise, and Added Excise	1,659,200
4)	Franchise Fee	1,500
	Total Taxes	$4,004,700

Source: Table 9-A

Detailed Table 10-A

WYOMING

Calculation of Taxes on

Surface Mine with 9.2 Million Tons Production

Property Tax

Machinery, Equipment, and Buildings*

Taxable Investment	$18,000,000
Depreciation - 2 years	None
Full Basis	18,000,000
Assessed at 25%	4,500,000
Tax Rate	60 mills
Tax	$ 270,600

Mineral Trust, Excise, and Added Excise

Taxable Value of Coal	$34,566,600
Tax Rate	4.8%
Taxes	1,659,200

Property Tax on Production

Taxable Value of Coal	$34,566,600
Average Levy	60 mills
Taxes	$ 2,074,000

Franchise Fee

Assets	$29.8 million
Rate	50 per $1 million
Tax	$1,500

*Does not include preparation, storage, loading, or railroad facilities

Summary Table 10-B

WYOMING

Taxes on Underground Mine with 4.99 Million Ton Production

1)	Property Tax on Machinery, Equipment, and Buildings	$ 45,000
2)	Property Tax on Production	3,737,195
3)	Mineral Trust Fund, Excise, and Added Excise	2,989,756
4)	Franchise Fee	1,700
	Total Taxes	$6,773,651

Source: Table 10-C

Detailed Table 10-C

WYOMING

Calculation of Taxes on

Underground Mine with 4.99 Million Ton Production

Property Tax - Machinery, Equipment, and Buildings[1]

Taxable Investment	$3,000,000
Depreciation - 2 years	-
Full Basis	3,000,000
Assessed at 25%	750,000
Tax Rate	60 mills
Taxes	$ 45,000

Property Tax on Production

Taxable Sales	$62,286,581
Average Levy	60 mills
Taxes	$ 3,737,195

Mineral Trust, Excise, and Added Excise

Taxable Sales	$62,286,581
Tax Rate	4.8%
Taxes	$ 2,721,600

Franchise Fee

$50 per $1 million in assets

Tax-$1,700

[1]Does not include preparation and storage, loading or railroad facilities. Also underground equipment is not assessed.

APPENDIX TABLES

of

Estimated capital investment and operating costs for coal strip mine

and

Estimated capital investment and operating costs for underground bituminous coal mine

Extracted from

U.S. Bureau of Mines, Information Circulars IC 8703 and IC 8682

NORTHERN GREAT PLAINS PROVINCE

Capital investment summary, 9.2-MM-tpy strip mine

	Quantity	Total cost
Dragline	2	$11,160,000
Bulldozer (with dragline)	4	604,800
Drill (overburden)	2	1,173,000
Wheel tractor scraper (with overburden drill)	4	1,077,600
Cable handler and reel	2	169,000
Coal drill	2	70,000
Coal shovel	2	2,880,000
Front-end loader (with coal shovel)	2	729,400
Truck (coal hauler)	15	4,452,000
Road grader	2	173,600
Wheel tractor scraper (reclamation and roads)	6	1,616,400
Bulldozer (reclamation and roads)	6	907,200
Water truck	1	43,200
Lubrication service truck	1	40,500
Mechanic truck	2	23,400
Welding truck	2	19,200
Electrician truck	2	19,200
Supply truck	1	9,000
Explosive truck	2	48,000
Pickup truck	6	36,000
Forklift	1	8,600
Crane truck	1	115,200
Pump (portable)	6	21,000
Floodlights and towers	-	21,600
Communications	-	16,200
Substation (10,000 kV-A)	4	432,000
Disconnect skid	8	97,200
Breaker skid	8	205,200
Substation (1,000 kV-A)	4	81,000
Substation (150 kV-A)	2	32,400
Connection box	15	24,300
Cable	-	980,900
Explosive storage facilities	-	50,000
Office and washhouse	1	325,000
Shop and warehouse	1	1,100,000
Oil and fuel storage facilities	-	30,000
Initial road construction	-	125,000
Site preparation	-	100,000
Exploration	-	150,000
Total direct		29,167,100
Field indirect	-	583,300
Total construction		29,750,400

(continued)

Capital investment summary, 9.2-MM-tpy strip mine - Continued

	Quantity	Total cost
Carried forward		$29,750,400
Engineering	-	595,000
Overhead and administration	-	1,517,300
		31,862,700
Contingency	-	4,779,400
		36,642,100
Fee	-	732,800
		37,374,900
Interest during construction, 5 percent	-	1,868,700
Net estimate		39,243,600

Estimated annual operating cost, 9.2-MM-tpy strip mine

	Annual cost	Cost per ton
Direct cost:		
Production:		
Labor	$1,544,500	$0.17
Supervision	316,500	.03
	1,861,000	.20
Maintenance:		
Labor	696,400	.08
Supervision	72,000	.01
	768,400	.09
Operating supplies:		
Spare parts	460,000	.05
Fuel, oil, and lubrication	1,196,000	.13
Drill bits	276,000	.03
Tires	552,000	.06
Explosives	1,196,000	.13
Miscellaneous	460,000	.05
	4,140,000	.45
Power	1,104,000	.12
Reclamation (contracted for mulching, liming, fertilizing, and seeding)	368,000	.04
Payroll overhead (40 percent of payroll)	1,051,800	.11
Union welfare[1]	7,123,600	.77
Royalty, strip license, and rent	2,216,000	.24
Indirect cost:		
15 percent of labor, maintenance, and supplies	1,015,400	.11
Fixed cost:		
Taxes and insurance, 2 percent of mine cost	747,500	.08
Depreciation	3,631,600	.40
	4,379,100	.48
Total	24,027,300	2.61

[1]Effective Dec. 6, 1974, under the Bituminous Wage Agreement of 1974.

Discounted cash flow analysis, 9.2-MM-tpy strip mine

15 percent - 20 years

R = $54,769,700 ÷ 6.259[1] = $8,750,600
less depreciation 3,631,600
Depletion + net profit = 5,119,000

Depletion = 10 percent of sales
Federal income tax = net profit
Depletion + net profit = cash flow - depreciation

Sales = 1.0/0.55 (1/2 operating cost + cash flow - depreciation)
= 1/0.55 (12,013,650 + 5,119,000)

Sales.....	$31,150,300
Operating cost.....	24,027,300
Gross profit.....	7,123,000
Depletion.....	3,115,000
Taxable income.....	4,008,000
Federal income tax.....	2,004,000
Net profit.....	2,004,000

Annual cash flow = net profit + depreciation + depletion
= $2,004,000 + $3,115,000 + $3,631,600
= $8,750,600

Selling price per ton = $31,150,300 ÷ 9,200,000 = $3.39

[1]Uniform series present worth factor.

4.99-MM-TPY MINE

Capital investment summary, 4.99-MM-tpy mine

Item	Quantity	Total cost
Continuous miner	26	$7,841,600
Loading machine	26	2,095,600
Shuttle car	52	3,853,200
Roof bolter	26	1,385,800
Ratio feeder	26	1,170,000
Auxiliary fan	26	98,800
Mantrip Jeep	26	455,000
Mechanic Jeep	10	138,000
Personnel Jeep	10	125,000
Trickle rock duster	26	114,400
Triple duty rock duster	15	580,500
Supply motor	8	250,400
Supply car	100	310,000
42-inch rope-type mainline belt conveyor	9,000 ft	720,000
36-inch rope-type secondary and panel belts	60,000 ft	4,020,000
Mainline belt power center (300 kV-A)	6	112,800
Section belt power center (150 kV-A)	16	200,000
Section power center (1,000 kV-A)	26	748,800
Section rectifier (200 kW)	26	65,000
Section switch house	26	244,400
Sectionalizing switch house	12	112,800
HV cable (300 MCM AL)	21,000 ft	210,000
PLM coupler	22	22,000
Section cable and coupler	-	136,500
Rectifier for truck haulage	5	125,000
Trolley wire	69,000 ft	216,000
Track (60-lb)	69,000 ft	690,000
Fresh water line	69,000 ft	258,800
Pumps and lines	-	44,000
Telephone (page phones)	-	18,000
Conveyor fire protection	-	38,000
Automatic controls and alarms	-	125,000
Scoop tractor	26	910,000
Battery charger	26	96,200
All service mask	36	3,600
Breathing apparatus	50	40,000
Self rescuer	950	35,700
Stretcher set	40	8,000
Safety light	600	26,400
Methanometer	600	240,000
Fire chemical car	15	57,000
Lamp (including accessories)	950	49,400
Dust sampler	75	30,000
Site preparation	-	75,000
Ventilation fan (dual)	-	120,000

(Continued)

Capital investment summary, 4.99-MM-tpy mine - Continued

Item	Quantity	Total cost
Concrete portal	5	75,000
Bulk rock dust facility	1	56,300
Substation and distribution	1	110,000
Bathhouse, office, and lamp house	1	687,500
Shop and warehouse	1	437,500
Powder and cap house	1	11,300
Front-end loader	1	63,000
Forklift	1	44,000
Bulldozer	1	100,000
Utility truck	2	18,000
Pickup truck	3	18,000
Oil storage	1	38,000
Water tank	1	25,000
Supply yard	1	25,000
Mine drainage treatment plant	-	37,500
Exploration	-	312,500
Total direct		30,275,300
Field indirect		605,500
Total construction		30,880,800
Engineering		617,600
Overhead and administration		1,574,900
		33,073,300
Contingency		4,961,000
		38,034,300
Fee		760,700
		38,795,000
Estimated development cost		23,177,000
		61,972,000
Interest during development		3,098,600
Gross estimate		65,070,600
Credit for coal mined during development at $10 per ton		30,528,000
		34,542,600
Coal acquired at $2,500 per acre		36,500,000
Net estimate		71,042,600

Estimated annual production cost, 4.99-MM-tpy mine

	Annual cost	Cost per ton
Direct cost:		
Production:		
Labor	$8,851,400	$1.77
Supervision	1,430,000	.29
	10,281,400	2.06
Maintenance:		
Labor	1,232,600	.25
Supervision	97,200	.02
	1,329,800	.27
Operating supplies:		
Mining machine parts	3,150,000	.63
Lubrication and hydraulic oil	1,250,000	.25
Roof bolts and timber	1,550,000	.31
Rock dust	650,000	.13
Ventilation	950,000	.19
Bits	600,000	.12
Cables	300,000	.06
Miscellaneous	750,000	.15
	9,200,000	1.84
Power	1,589,500	.32
Water	4,400	
Payroll overhead (40 percent of payroll)	4,644,500	.93
Union welfare[1]	5,099,200	1.02
Indirect cost:		
15 percent of labor, supervision, and supplies	3,121,700	.63
Fixed cost:		
Taxes and insurance, 2 percent of mine cost	1,358,900	.27
Depreciation	3,675,100	.74
	5,034,000	1.01
Total	40,304,500	8.08

[1]Effective Dec. 6, 1974, under the Bituminous Wage Agreement of 1974.

Discounted cash flow, 4.99-MM-tpy mine

15 percent - 20 years

R = $92,246,300 ÷ 6.259[1] = $14,738,200
less depreciation 3,675,100
Depletion + net profit = 11,063,100

Depletion = 10 percent of sales
Federal income tax = net profit
Depletion + net profit = cash flow - depreciation

Sales = 1/0.55 (1/2 operating cost + cash flow - depreciation)
= 1/0.55 (20,152,300 + 11,063,100)

Sales.....	$56,755,300
Operating cost.....	40,304,500
Gross profit.....	16,450,800
Depletion.....	5,675,300
Taxable income.....	10,775,500
Federal income tax.....	5,387,800
Net profit.....	5,387,800

Annual cash flow = net profit + depletion + depreciation
= $5,387,800 + $5,675,300 + $3,675,100
= $14,738,200

Selling price per ton = $56,755,300 ÷ 4,994,900 = $11.36

[1]Uniform series present worth factor.

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